

The proceedings of the Officers and Council, at their last meeting, were read by Prof. Frazer, clerk, pro tem.

Pending nominations, Nos. 226, 227 and 228; and new nominations, Nos. 229, 230 and 231, were read.

Stated Meeting, June 15.

Present, thirteen members.

Dr. PATTERSON, President, in the Chair.

Letters were received and read:—

From the Corporation of the University of Cambridge, Mass., dated Cambridge, 28th April, 1849, acknowledging the receipt of Vol. V. No. 42, of the Proceedings of this Society:—

From the New Jersey Historical Society, dated Newark, 16th May, 1849, acknowledging the receipt of the Proceedings of this Society, from No. 38 to 42, inclusive: and—

From Edw. D. Ingraham, Esq., dated Philadelphia, 15th June, 1849, announcing a donation to the Society.

The following donations were announced:—

FOR THE LIBRARY.

Monthly Notices of the Royal Astronomical Society. Vol. IX. No. 5, March 9; and No. 6, April 13, 1849. London. 8vo.—*From the Royal Astronomical Society.*

The Annals and Magazine of Natural History, including Zoology, Botany and Geology. Vol. III. No. 16. April 1849. London. 8vo.—*From Sir William Jardine, Bart. F.L.S.*

Proceedings of the Academy of Natural Sciences of Philadelphia; from March 6 to April 24, 1849.—*From the Academy of Natural Sciences, Philadelphia.*

On the Intimate Structure and History of the Articular Cartilages; and Observations on the Existence of the Intermaxillary Bone in the Embryo of the Human Subject. By Joseph Leidy, M.D. 8vo.—*From the Author.*

History and Transformations of Corydalus Cornutus. By S. S. Haldeman, A.M.; and Internal Anatomy of Corydalus Cornutus,

in its three stages of existence. By Joseph Leidy, M.D. Extracted from the Journal of the American Academy of Arts and Sciences. Boston and Cambridge, 1848. 4to.—*From the Authors.*

Journal of the Franklin Institute. Third Series. Vol. XVII. No. 6. June, 1849. Philadelphia. 8vo.—*From the Institute.*

The Medical News and Library. Vol. VII. No. 78, and Supplement. June, 1849. Philadelphia. 8vo.—*From Lea and Blanchard.*

The African Repository and Colonial Journal. Vol. XXV. No. 6. June, 1849. Washington. 8vo.—*From the American Colonization Society.*

A Narrative of Events which occurred in Baltimore Town during the Revolutionary War: to which are appended various Documents and Letters, the greater part of which have never been heretofore published. By Robert Purviance. Baltimore, 1849. 8vo.—*From the Maryland Historical Society.*

Fac-simile Reprint of "Poor Richard's Almanac, for the year of Christ, 1733. Printed and sold by B. Franklin, at the New Printing Office, near the Market." Philadelphia, 1849. 12mo. *From E. D. Ingraham, Esq.*

Mr. Isaac Lea made the following communication upon some reptilian foot-marks recently discovered by him in the gorge of the Sharp Mountain, near Pottsville, Pa.

It has not been until within a very few years that fossil "foot-marks" have been discovered and sufficiently observed to identify them with existing families and genera. Dr. Deane and Professor Hitchcock observed many in the new red sandstone of Connecticut and Massachusetts, and have described them in various papers in the American Journal of Science and Arts. Recently the latter gentleman has published an extensive and able paper on the subject in the Transactions of the American Academy of Arts and Sciences, Vol. III.

Accompanying the "foot-marks," the surface of the layers was frequently covered with "ripple marks, and the pits of rain drops." Mr. Redfield also observed them in New Jersey. As strict science is always disposed to receive new facts with caution, there was a good deal of scepticism displayed on the announcement of these discoveries; but the accumulation of evidence from various parts of the world soon satisfied the doubts of the most scrupulous. It would now be almost ridiculous to doubt "fossil foot-marks." There is no geological fact better established.

The great point now among geologists is to enlarge our knowledge of them by increasing and multiplying the facts. For this purpose there have been many active observers in the field, and only a few years since the scientific world was startled with the announcement, by Dr. King, of Greensburg, Pa., of the fact, that he had discovered unquestionable fossil foot-marks of reptiles in the sandstone of the coal measures, in Westmoreland county, near that town. A short time before this Mr. Logan had discovered, in the carboniferous rocks of Nova Scotia, foot-marks which appeared to Mr. Owen to belong to some unknown species of reptile. A communication was made by Dr. King, to the Academy of Natural Sciences, December 17th, 1844, in which he gave the description and figures of a bird and two "saurian reptiles." No saurian remains had, before these announcements, been found lower in the series than the *new red sandstone*, and this new fact created great interest among geologists. Dr. King states the impressions to be "near 800 feet beneath the topmost stratum of the coal formation."

Mr. Lyell, in Silliman's Journal, July, 1846, describes his visit to Greensburg, where he examined these foot-marks, and sustained Dr. King's observation and description of them. He considered them to belong to the genus *Cheirotherium*. He says, "they consist, as before stated, of the tracks of a large reptilian quadruped, in a sandstone in the middle of the carboniferous series, a fact so full of novelty and interest that, when we reflect on its importance, all disappointment in the abandonment of the spurious foot prints is forgotten?" and further on he observes, that "here, in Pennsylvania, for the first time, we meet with evidence of the existence of air-breathing quadrupeds, capable of roaming in those forests where the *Sigillaria*, *Lepidodendron*, *Calopteris*, *Calamites*, *Ferns*, and other plants flourished."

In these papers of Dr. King and Mr. Lyell, it is not a little remarkable that they both should have overlooked or passed unnoticed the fact, announced by Mr. Lyell himself, three years before, in Silliman's Journal, that Mr. Logan had discovered foot steps in the carboniferous rocks of Nova Scotia, "constituting the first indications of the reptilian class known in the carboniferous rocks." (Vol. 45, page 358.)

The object of this communication is to announce to the Society, that I have discovered the foot prints, in bas relief, of a *reptilian quadruped*, lower in the series than has yet been observed. On the 5th of April last, in the examination of the strata in the gorge of the Sharp Mountain, near Pottsville, Pa., where the Schuylkill breaks

through it, a large mass of remarkably fine old red sandstone attracted my attention. Imprinted upon it, I was surprised to find six distinct impressions of foot-marks, in a double row of tracks, each mark being duplicated by the hind foot falling into the impression of the fore foot, but a little more advanced. The strata here are tilted a little over the vertical, and the surface of rock exposed was about twelve feet by six feet, the whole of which surface was covered with ripple marks and the pits of rain drops, beautifully displayed in the very fine texture of the deep red sandstone.

The six *double impressions* distinctly show, in the two parallel rows formed by the left feet on the one side and the right feet on the other, that the animal had five toes on the fore feet, three of which toes were apparently armed with ungual appendages. The length of the double impression is four and a quarter inches;* the breadth four inches; the distance apart in the length of the step of the animal thirteen inches; across, from outside to outside, eight inches.



* The figure is rather more than half the natural size of the impression.

The mark of the dragging of the tail is distinct, and occasionally slightly obliterates a small part of the impressions of the foot-marks. The ripple marks are seven to eight inches apart, and very distinct, as well as the pits of the rain drops. These foot-marks assimilate remarkably to those of the recent *Alligator Mississippiensis*, and are certainly somewhat analogous to the *Cheirotherium*.

The geological position of this reptilian quadruped is of great interest, from the fact, that no such animal remains have heretofore been discovered so low in the series. Those described by Dr. King, in the great western coal field, are only 800 feet below the surface of the coal formation. (No. 13, of Prof. Rogers, the State Geologist.) The position of the Pottsville "foot-marks" is about 8500 feet below the upper part of the coal formation there, which is 6750 feet thick, according to Professor Rogers, and they are in the "*red shale*," (his No. 11,) the intermediate silicious conglomerate (No. 12,) being stated by him to be 1031 feet thick at Pottsville. These measurements would bring these foot-marks about 700 feet *below the upper surface of the old red sandstone*.

A mass of coal plants exists immediately on the northern face of the heavy conglomerate, here tilted ten degrees over the vertical, and forming the crest and "back-bone" of Sharp Mountain. This conglomerate mass is about 150 feet thick at the western side of the road below Pottsville. On the same road side, about 1735 feet from these coal plants, is the face of the rock, tilted slightly over the vertical, and facing the north. It is proper to state, that the limestone of the old red sandstone exists here, about two feet thick, and underlies these "foot-marks" sixty-five feet.

On the slab there are obscure remains of other organized matter; small spots, with filamentous radiations, and a small bone or seed-like mark, which is difficult to make out.

I was fortunate enough to obtain these impressions in a large and heavy slab, which is now in my possession.

It is my intention, when more at leisure, to make a more lengthened and accurate description, with correct figures, of this remarkable and interesting specimen, which exhibits on its table the record of the oldest saurian yet observed. When finished, the paper will be submitted to the Society for publication in the Transactions. In the meantime, I propose the provisional name of *Sauropus primævus*.